CONTENTS VOLUME 68

Research Papers

Coastwise transport reconsidered: lateral displacements in oblique subduction zones, and tectonic consequences
M.E. Beck, Jr. (Bellingham, WA, USA) 1

Remelting mechanisms for shallow source regions of mare basalts
M. Manga and J. Arkani-Hamed (Montreal, Que., Canada) 9

Magnetic hysteresis properties of greigite (Fe_3S_4) and a new occurrence in Holocene sediments from Swedish Lappland
I.F. Snowball (Lund, Sweden) 32

The need for geodetic observations to constrain the relative motion of the Indian tectonic plate
D. Guptasarma, M. Purnachandra Rao, M. Ravikumar and S.P. Satyabala (Hyderabad, India) . . 41

ULF magnetic field measurements near the epicenter of the M_S 7.1 Loma Prieta earthquake
A. Bernardi, A.C. Fraser-Smith, P.R. McGill and O.G. Villard, Jr. (Stanford, CA, USA) 45

Special Section: Studies of the Earth's Deep Interior
Guest Editor: D. Gubbins

Contents vi
Preface vii

Research Papers

Geomagnetic secular variation over Spain 1970–1988 by means of spherical cap harmonic analysis
A. Garcia (Madrid, Spain), J.M. Torta, J.J. Curto and E. Sanclement (Tarragona, Spain) 65

Physical properties at the top of the core and core surface motions
D. Jault and J.L. Le Mouël (Paris, France) 76

Preliminary spectral analysis of the residual signal of a superconducting gravimeter for periods shorter than one day
N. Florsch, B. Valette (Paris, France), J. Hinderer, D.J. Crossley and H. Legros (Strasbourg, France) 85

On the excitation, detection and damping of core modes
D.J. Crossley, J. Hinderer and H. Legros (Strasbourg, France) 97

Anelastic convection in the mantle with variable properties
F. Quareni, W. Marzocchi and F. Mulargia (Bologna, Italy) 117

Detailed investigation of a spot on the core–mantle boundary using digital PcP data
J. Neuberg (Yogyakarta, Indonesia) and J. Wahr (Boulder, CO, USA) 132

Properties of steady flows at the core–mantle boundary in the frozen-flux approximation
K.A. Whaler (Leeds, UK) 144

Convection in a rapidly rotating spherical shell at infinite Prandtl number: steadily drifting rolls
K. Zhang (Leeds, UK) 156

Dynamics of the secular variation
D. Gubbins (Leeds, UK) 170

A study of the outermost liquid core using differential travel times of the SKS, SKKS and S3KS phases
A. Souriau (Toulouse, France) and G. Poupinet (Grenoble, France) 183

Letter Section
Centroid-moment tensor solutions for October–December 1990
A.M. Dziewonski, G. Ekström, J.H. Woodhouse and G. Zwart (Cambridge, MA, USA) 201

Research Papers
On tidal gravity, heat flow and lateral heterogeneities
P.A. Rydelek, W. Zürn (Wolfach, Germany) and J. Hinderer (Strasbourg, France) 215
Seismic velocities beneath central and southern Britain from broad-band surface waves
J.E.C. Meredith (Cardiff, UK) and R.G. Pearce (Edinburgh, UK) 230
The magnetic properties of particle-sized samples from the Luo Chuan loess section: evidence for pedogenesis
H. Zheng, Z. An (Xian, People's Republic of China), F. Oldfield, J. Shaw (Liverpool, UK) and L. Yu (Shanghai, People's Republic of China) 250
Recent seismicity of the East African Rift system and its implications
F. Kebede (Addis Ababa, Ethiopia) and O. Kulhánek (Uppsala, Sweden) 259
Far-field flexural response of Lake Bonneville from paleopluvial lake elevations
G.M. May, D.S. Hodge (Amherst, NY, USA) and B.G. Bills (Houston, TX, USA) 274
On the choice of wavenumbers in viscoelastic seismic modelling with discrete wavenumber–frequency methods
H. Thybo (Copenhagen, Denmark) 285

Book Reviews
Gems, Granites and Gravels: Knowing and Using Rocks and Minerals by R.V. Dietrich and B.J. Skinner—A.C. Dunham 294
Seismology and Plate Tectonics by D. Gubbins—P.G. Richards 295
Planetary Mapping by R. Greeley and R.M. Batson (Editors)—P. Cattermole 296
A Geologic Time-Scale 1989 by W.B. Harland, R.L. Armstrong, A.V. Cox, L.E. Craig, A.G. Smith and D.G. Smith—M.H. Dodson 297